REMARKS

Entry of the foregoing, re-examination and reconsideration of the subject matter identified in caption, as amended, pursuant to and consistent with 37 C.F.R. §1.112, and in light of the remarks which follow, are respectfully requested.

Independent claims 1, 18, 33 and 48 have been amended to specify that carbon black may optionally be present in the rubber composition in an amount less than the amount of silicon carbide. Support for this feature may be found, for example, in the specification on page 26, lines 1-3. New claims 65-80 have also been added. Support for claims 65, 69, 73 and 77 may be found on page 26, line 22; support for claims 66, 70, 74 and 78 may be found on page 40, line 17; support for claims 67, 71, 75 and 79 may be found on page 38, line 23; support for claims 68, 72, 76 and 80 may be found on page 38, line 21. Accordingly, claims 1-80 are currently pending in this application.

Claims 1, 2, 4, 5, 7-19, 21, 22, 24-34, 36, 37, 39-49, 51, 52 and 54-64 were rejected under 35 U.S.C. §102(e) as anticipated by U.S. Patent No. 6,469,089 to Wang et al. for reasons set forth in paragraph (2) of the Office Action. Reconsideration and withdrawal of this rejection are respectfully requested for at least the following reasons.

The present claims relate to a rubber composition comprising (1) a diene elastomer, (2) a reinforcing inorganic filler comprising silicon carbide having a BET specific surface area between 20 and 200 m^2/g and an average particle size by mass, d_w between 10 and 350 nm, and (3) a coupling agent providing a bond between the reinforcing filler and the diene elastomer. Optionally, the composition also can include carbon black, which when included, is present in an amount less

than that of the silicon carbide. As explained in the specification (page 3, line 22+), silicon carbides have been previously added to tire treads in order to improve the grip on snow-covered or icy surfaces. In these known treads, the silicon carbide particles are generally added in small proportions and are always added to rubber formulations which contain a reinforcing filler such as silica or carbon black. Thus, the function of the silicon carbide in these known treads is not for reinforcement but to improve the grip of the tread by a "claw" effect on snow or ice

In contrast to conventional wisdom in this art as discussed above, the present inventors discovered that some specific carbides are capable of acting as true reinforcing fillers, i.e., replacing carbon black conventionally used in treads as reinforcing fillers, thereby offering excellent processing ability to the rubber compositions and very great dispersibility (both comparable to those obtained with carbon black). Moreover, it has been discovered that the use of specific silicon carbides as reinforcing fillers also makes it possible to overcome drawbacks relating to curing kinetics which are associated with the use of reinforcing white fillers of the silica and alumina type. Comparative Test 1 (page 40) has clearly demonstrated that conventional and known silicon carbides, even in the presence of a high-performance coupling agent, do not act as a reinforcing inorganic filler (see in particular, comments on page 42, lines 7-21). Only the specific silicon carbides as claimed can act as a true reinforcing filler, being able to replace carbon black, as clearly shown by Test 2 (page 42, see, in particular, comments on page 44, lines 1-7). Test 3 (page 44, see, in particular, page 46, lines 12-19) also proves that a true reinforcing silicon carbide (filler E), when compared to carbon black and silica, also provides, quite unexpectedly, vulcanization kinetics (illustrated by the conversion

rate constant K – see Table 7) which are just as good as carbon black but constitute a significant improvement compared with reinforcing white fillers such as silicas which, for an equivalent formulation, suffer in known manner from a very significant reduction in the constant K (generally divided by a factor of 2 to 3).

Wang et al. '089 is directed to elastomeric compositions which include at least one reinforcing filler and at least one wet skid enhancing filler. The wet skid enhancing filler can be SiC (column 3, line 57) and the patent teaches that this filler is different than the reinforcing filler (column 5, lines 61-62). The reinforcing fillers used in the Examples – when SiC is used – consist of carbon black (CRX2000 is the commercial name used by Cabot for silica-coated carbon blacks). Note Tables 1, 3 and 4 of Wang et al. '089.

It is clear from a review of Wang et al. '089 that SiC is not used as a reinforcing filler but solely as a wet skid enhancing filler, i.e., to improve the road-gripping properties of the composition. A review of the data in Table 4 of the reference shows that the amount of reinforcing filler added (54 to 63 phr) is substantially greater than the amount of SiC added (18 to 32 phr); note Examples 8-13. To the contrary, the specific SiC particles employed in the compositions of the present invention act as a true reinforcing filler. When carbon black is present in the compositions of the present invention, the amount thereof is less than the quantity of SiC.

The silicon carbides specifically used in the presently claimed compositions have an average particle size ranging from 10 to 350 nm (claim 1), 20 to 300 nm (claim 9), or 20 to 250 nm (claim 10). It appears to be the Examiner's position that the silicon carbides used in the formulations of Wang et al. '089 (PT8026 J and

BPT8044-1) inherently have an average particle size within the ranges of the present claims, based on information from the website of the supplier (identified in the footnotes of Table 1 as Nanomaterials research Corporation, Longmont, Colo.). Respectfully, Applicants disagree with the Examiner's position.

The copy of the website attached to the Office Action identifies the company as NANO Products Corporation, not Nanomaterials research Corp. Further, the copy of the website does not list any products, let alone the two silicon carbides disclosed in the reference. In addition, the copy of the website is undated. The Examiner argues that the website discloses that "the company's definition of nanoparticle is that having particle of less than 100 nm" (page 3 of the Office Action). It is mere conjecture to presume from the above that the silicon carbides identified in the reference had particle sizes within the claimed ranges.

It is well established that "[t]he fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic." In re Rijckaert, 9 F.3d 1531,1534, 28 U.S.P.Q.2d 1955,1957 (Fed. Cir. 1993). "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities The mere fact that a certain thing may result from a given set of circumstances is not sufficient.' In re Robertson, 169 F.3d 743,745, 49 U.S.P.Q.2d 1949,1950-51 (Fed. Cir. 1999)." " In relying upon the theory of inherency, the Examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art."

Ex parte Levy, 17 U.S.P.Q.2d 1461,1464 (Bd. Of Pat. Apps. & Inter. 1990)." Note M.P.E.P. §2112. Based on these principles, Applicants respectfully submit that there is no basis in fact and/or technical reasoning to reasonably support a conclusion that the allegedly inherent characteristic of average particle size necessarily flows from the disclosure of Wang et al. '089.

For at least the above reasons, the §102(e) rejection over Wang et al. '089 should be withdrawn. Such action is earnestly requested.

Claims 1-64 were rejected under 35 U.S.C. §102(e) as anticipated by U.S. Patent No. 6,121,346 "in view of evidence given in WANG (US 6,469,089)." Reconsideration and withdrawal of this rejection are requested in view of the above amendments and for at least the following remarks.

Visel et al. '346 discloses elastomeric compositions containing a hybrid filler composed of aggregates containing large and small particles where the smaller particles are grafted onto the surface of the larger particles. The filler comprising the small and large particles may be carbon black, modified carbon black, silica, modified silica, silicon carbide, boehmite, synthetic aluminosilicates, natural aluminosilicates, titanium dioxide and organic fillers such as ground forms of polystyrene, polypropylene, polyurethane and phenolic resins (see col. 3, lines 62-67). The small and large particles may be composed of the same or different materials (column 4, lines 1-5). There are no specific formulations disclosed containing SiC particles having a surface area and particle size within the ranges of the present claims.

Thus, Visel et al. '346 merely discloses a concept of using as a filler in rubber compositions, smaller particles grafted onto the surface of the larger particles,

disclosing a very large number of possible reinforcing fillers, but without teaching nor suggesting any advantage of SiC nor giving any working examples. Visel et al. '346 essentially promotes the use of carbon blacks (col. 4, line 12 to line 38) or siliceous fillers (col. 4, line 39 to col. 5, line 8) which are largely described compared to a very short mention of SiC (col. 5, lines 9-11). There is, in fact, no reason for those skilled in the art to look to Wang et al. '089, which proposes a solution to improve the wet skid resistance or grip, and Visel et al. '346, suggesting a simple concept (note once more, without any working example) to improve the wear resistance, where both properties, as well known in the art, are rather antagonistic. Even if those skilled in the art would have tried to combine the teachings of both references, they would have used the particles of Visel et al. '346 (i.e., small particles grafted onto the surface of larger particles) as a wet skid enhancing filler, in particular, in an amount less than the amount of carbon black, i.e., not as a true reinforcing filler.

It is well established that "[a' claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628,631, 2 USPQ.2d 1051,1053 (Fed Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the . . ..claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226,1236, 9 USPQ2d 1913,1920 (Fed. Cir. 1989). In the absence of any specific formulation disclosed in Visel et al. '346 which contains a silicon carbide having a surface area and particle size within the ranges of the present claims, it is respectfully submitted that the reference fails to anticipate claims 1-64.

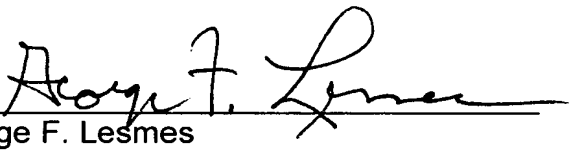
Accordingly, for at least the aforementioned reasons, the §102(e) rejection based on Visel et al. '346 should be reconsidered and withdrawn. Such action is respectfully requested.

From the foregoing, further and favorable action in the form of a Notice of Allowance is believed to be next in order and such action is earnestly solicited. If there are any questions concerning this paper or the application in general, the Examiner is invited to telephone the undersigned at (703) 838-6683 at her earliest convenience

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

Date: April 21, 2004

By: 

George F. Lesmes
Registration No. 19,995

P.O. Box 1404
Alexandria, Virginia 22313-1404
(703) 836-6620